Triplet 2 spin 1/2 particles

$$\chi_t = \alpha_+ \times \alpha_- + \alpha_- \times \alpha_+ \cancel{=} \alpha_0 \alpha_0$$

$$J_+ \alpha_+ = 0$$
$$J_- \alpha_+ = \alpha_0$$
$$J_+ \alpha_- = \alpha_0$$
$$J_- \alpha_- = 0$$

$$J_+ = J_x + i J_y$$
$$J_- = J_x - i J_y.$$

$$\therefore J_x = \frac{1}{2}(J_+ + J_-)$$
$$J_y = \frac{1}{2i}(J_+ - J_-)$$

$$\therefore J_x (\alpha_- - \alpha_+) = 0$$
$$J_y (\alpha_- + \alpha_+) = 0$$

$$\therefore \alpha_x = \frac{1}{\sqrt{2}}(\alpha_- -$$
$$\therefore \alpha_y = \frac{1}{\sqrt{2}}(\alpha_- +$$
$$\alpha_- = \frac{1}{\sqrt{2}}(\alpha_x + \alpha_y$$
$$\alpha_+ = \frac{1}{\sqrt{2}}(\alpha_y - \alpha$$

$$\mathbb{k} = \alpha\, J_x^2 \pm J_y^2 / e$$
$$H_s \alpha_x = \cancel{(\ )} \alpha$$
$$\mathbb{k}\ \alpha_y = \cancel{(\ )}$$
$$m\ \alpha_z = \cancel{(\ )}$$

~~$\therefore \chi_t =$~~

$$\therefore \chi_t = \cancel{\frac{1}{2}(\alpha_x + \alpha_y)(\alpha_y - \alpha_x) + \frac{1}{2}(}$$
$$= \frac{1}{2}(\alpha_y - \alpha_x)(\alpha_y + \alpha_x) + \frac{1}{2}(\alpha_y + \alpha_x)(\alpha_y - \alpha_x)$$
$$= \frac{1}{2}\Big(\alpha_y \times \alpha_y - \alpha_x \alpha_x - \alpha_x \alpha_y + \alpha_y \alpha_x$$
$$+ \alpha_y \cdot \alpha_y - \alpha_x \alpha_x + \alpha_x \alpha_y - \alpha_y \alpha_x\Big) -$$
$$= \alpha_y \alpha_y - \alpha_x \alpha_x - \alpha_z \alpha_z$$

$$\boxed{Pr(f \in B) = \mu\left(f^{-1}(B)\right)}$$

J. Bub 'Randomness & locality in QM'
in Suppes (ed.) 'Logic, Prob. in QM' 1976

Footnote 18 p. 419 The impossibility of generating [illegible]
QM's commit to locally [illegible] hypotheses in
the case of a composite 2-particle system
associated with the Hilbert space $H_3 \otimes H_3$
(3+3 dimensional) follows as an immediate corollary
to K, S theorem. This was pointed out
to me by Abner Shimony, after a conversation
with Specker. I leave this as an exercise for
the reader, and the hypothesis is dealt with
the simplified version of the proof given
in Bub (1974) Ch. 5.